

## MYRMELEONIDÆ FROM AUSTRALIA.

BY NATHAN BANK.

The ant-lion flies of Australia have been mostly described by Walker and Gerstaecker. In collections sent to me by Mr. Dodd, from Kuranda and Port Darwin, and by Mr. Perkins, from several parts of Queensland, are a number of the described species and several that are new. These are described in this paper.

The Australian Myrmeleoniidæ are more like the European forms than like those of the United States. Two genera, *Myrmeleon* and *Acanthaclisis*, they have that occur also with us, but these genera are generally distributed throughout the world. The new general are more allied to the European than to our genera. There is practically no similarity to the South African forms.

The eight genera known to me can be tabulated as follows:

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|---|----------------------|
| 1. No spurs, one cross-vein, before radial sector in hind wings; wings broad  | <b>Chrysoleon</b>    |
| Spurs present.....  | 2                    |
| 2. One cross-vein before radial sector in hind wings.....   | 5                    |
| Several cross-veins before radial sector in hind wings; anal ends before fork of radial sector; pronotum broader than long.....   | 3                    |
| 3. In middle of apical half of each wing is a nearly straight line formed by the bent longitudinal veins and very short cross-veins; anal vein of hind wings runs into lower cubitus, legs short and stout..... | <b>Acanthaclisis</b> |
| No such line of bent veins and short cross-veins.....   | 4                    |
| 4. In both wings the upper cubitus and the median unite long before margin of wings; wings very broad.....  | <b>Callistoleon</b>  |
| Upper cubitus and median not united, wings more narrow.....   | <b>Myrmeleon</b>     |
| 5. Basal joint of tarsi longer than apical joint; anal ends far out on wings, beyond origin of first fork of radial sector.....   | <b>Protoplectron</b> |
| Basal joint of tarsi not longer than apical; anal vein ends nearer base of wing, at or before origin of first fork of the radial sector.....  | 6                    |
| 6. Spurs as long as first four tarsal joints together.....  | <b>Distoleon</b>     |
| Spurs barely longer than first joint of tarsus.....   | 7                    |
| 7. Wings broad in stigmal area, in middle of this area is a straight line as in <i>Acanthaclisis</i> formed by bent longitudinal veins and very short cross-veins.....  | <b>Glenurus</b>      |
| Wings more narrow; no such line formed by bent veins and short cross-veins  | <b>Formicaleo</b>    |

**Glenurus pulchellus** Ramb.

Mid-Queensland (Perkins) also New South Wales (Froggatt).

**Glenurus dissolutus** Gerst.

Port Darwin, 12 May (Dodd).

**Glenurus stigmatus**, n. sp.

Face pale, a large interantennal black spot, a transverse pale band above this, and the vertex brown; antennæ black; pronotum with a broad black median stripe, containing a pale median stripe in fore part, sides pale, streaked and dotted with black; rest of thorax black, with a few small pale spots on the lobes; abdomen black; legs black, tibia I and II with basal and preapical bands pale, sometimes also a median spot above; hind tibiae pale behind, except tip, and in front at

base and tip pale; base of first tarsal joint pale; legs with short black hair and longer, erect bristles; spurs rather longer than first tarsal joint. Wings hyaline, with many small dots, mostly on forkings of veins, and in apical part, larger ones along radius and cubitus, forming rather oblique lines at ends of anal veins, and on gradate series in fore-wings; stigma a large, black spot in both wings, very prominent; wings of usual shape and much like *G. dissolutus*.

Expanse 80 mm., abdomen long 20 mm. From Kuranda, Queensland, Australia, March, (Dodd).

**Protoplectron costatus** n. sp.

Face pale, black in antennal region, vertex pale, a transverse black line, and behind it a row of spots, a small trapeze in the middle and two spots each side toward eye; antennæ pale brown, short, with large knob; pronotum brown, darkest behind on sides, paler in middle, with some long white hair, and also on the pleura; abdomen brown, with extremely short white hair; legs pale, femora dark above, tibiæ black at base and tip, tarsi black in middle, pale on most of first and fifth joints, with much long white hair, and some black bristles; tarsal joint I much longer than IV, one-half as long as tibiæ, spurs as long as first joint. Wings hyaline, narrow, acute at tip, and fore wings rather falcate; venation mostly dark, but some patches of cross-veins wholly yellow, and long streaks of pale in the longitudinal veins; stigma brown at base. In fore wings the lower cubitus runs parallel to anal vein for a long distance; but one series of costal cells in either wing; eight branches of radial sector before stigma in fore-wing.

Expanse 48 mm., abdomen 18 mm.

From Port Darwin, Australia, 10 April (Dodd).

**Protoplectron pallidum** n. sp.

Lower part of face yellowish, upper part and the front black; vertex with a broad transverse pale band from eye to eye, divided on the median line; antennæ yellowish brown, the second joint with a darker ring; pronotum pale yellowish; thorax dark brown on sides, pale through the middle, and a pale spot above base of each wing; pleura mostly pale or light brown; abdomen black, legs pale, rather reddish on femora and tarsi, no bands or marks, clothed with long white hair and black bristles. Antennæ rather longer than head plus thorax; pronotum once and a fourth longer than broad, only slightly narrowed in front; abdomen short, not near as long as wings. Legs rather short; tarsi very slender, basal joint more than one half as long as tibia, the spurs of the same length, joints 2, 3, and 4 very short, 5th joint more than one-half as long as the first, on its basal part beneath are several short, curved spines forming a comb. Wings yellowish hyaline, unspotted; stigma scarcely visible; venation yellowish, or brownish yellow, not dotted. Wings moderately slender, acute at tips, a double costal series of cells in fore wing, single series in hind wing; about 7 cross-veins before origin of radial sector in fore wing, only one in hind wing; in fore wing the first branch of

the radial sector arises long before end of the anal vein, which is nearly one-half way out on the hind margin; apical portions of both wings have the longitudinal veins very close together.

Expanse 58 to 68 mm., abdomen 20 mm.

Several specimens from Port Darwin, Australia, 8 April to 4 May, (Dodd).

### **Callistoleon** n. gen.

Wings rather broad; anal veins of fore-wings ending long before origin of the first branch of the radial sector; posterior branch of cubitus running obliquely down toward anal vein, two series of cells between it and anal vein; about seven cross-veins before origin of radial sector in fore-wings, some crossed; a single series of costal cells; the anterior branch of cubitus and the median vein unite before tip, and from the anastomosis the veins radiate somewhat, to the margin, more strongly so in the hind wings. In the hind wings about four cross-veins before radial sector; the posterior branch of cubitus running obliquely down to margin, before origin of radial sector; head rather broad; antennæ moderately long, pronotum broader than long; tarsal joints short, first much shorter than fifth; spurs a little longer than basal joint.

Type—*Myrmeleon erythrocephalum* Leach.

### **Callistoleon erythrocephalum** Leach.

Mid-Queensland (Perkins).

### **Distoleon** n. gen.

Wings rather narrow; seven cross-veins before radial sector in fore wings, one in hind wings; anal ends before origin of first branch of radial sector; a single costal series. In hind wings anal ends soon after origin of lower cubitus, not parallel thereto. Spurs as long as first four tarsal joints, fifth joint much longer than first; tarsus I about as long as tibia I; pronotum broad.

Type—*D. verticalis*; also includes *Formicaleo bistrigatus*.

### **Distoleon verticalis** n. sp.

Head pale, a black band below and one above base of antennæ, another band above this, narrowly interrupted in the middle or broken into four spots, and on the vertex four spots forming a trapeze in the middle and two each side toward the eye; antennæ brown, annulate with pale; pronotum pale, darker on margin, rest of thorax grayish brown, abdomen blackish, a pale spot above in middle of each segment, legs pale, some black dots at bases of bristles, black and white bristles. Wings hyaline, a dark dot on stigma, one on hind margin one-third the way out at end of anal vein, and two at end of cubitus and median veins, and other smaller spots in apical part of wing, and at forkings of longitudinal veins, these veins black and white in long streaks, some cross-veins all black, others all yellow, others black and yellow. Hind wings with two dots at end of cubitus and less distinctly on apical portion. Antennæ long; legs short, spurs

heavy, curved, as long as first four joints, fifth joint twice as long as first. Pronotum broader than long, not narrowed in front. Wings rather long acute; one costal series, cells in region of gradate series are long and narrow.

Expanse 68 mm., abdomen long 25 mm.

Mid-Queensland, Australia, (Perkins).

**Distoleon bistrigatus** Ramb.

(*M. striola* Walk.)

Port Darwin 20 April, 28 August; Kuranda, March; Mid-Queensland.

**Chrysoleon** n. gen.

No spurs; legs slender, first tarsal joint as long as second plus third, hardly as long as the fifth; pronotum slender. Fore wings broad, hind wings narrower and longer than fore wings; costals of fore wings frequently forked; three cross-veins before radial sector; anal ends a little beyond origin of first branch of medial sector; a double series of anal cells; the lower cubitus running obliquely down to the hind margin. In hind wings one cross-vein before radial sector; anal ending beyond origin of first branch of radial sector; lower cubitus running down to margin, upper cubitus uniting with median before tip of wing.

**Chrysoleon punctatum** n. sp.

Head yellow, a faint dark mark each side on vertex; antennæ yellowish, darker at tip; pronotum pale, with some scattered brown dots; rest of thorax mostly pale; abdomen pale, a black stripe each side; legs pale, minute brown dots at base of bristles, not distinct on hind tibiæ. Wings hyaline, outer apical part of fore wing with small brown clouds at forks of veins, and one under the stigma, also in hind wing, but fewer in the posterior apical part. Venation pale, frequently dotted with brown in fore wings, especially along cubitus. Antennæ short, not reaching beyond middle of thorax; pronotum slender, narrowed in front, this and the rest of thorax with long white hairs, abdomen with short white hair; legs with some long white hairs and black bristles. Fore wings broad below stigma, barely acute at tips, cells of wing small and irregular; radial sector seven branched before stigma; costal area broad, the cells narrow.

Expanse forewings 43 mm., hind wings 47 mm., abdomen long 13 mm.

From Port Darwin, Australia 20 April (Dodd.)

**Formicaleo dispersus** n. sp.

On the same general plan as *F. septus* and *F. bistrigatus*, but no dark stripes in front wings instead of which are about twenty small dark spots in the area of the stripe of *F. septus* toward the hind margin, and in hind wings is a stripe as in *F. septus* but its apical part broken up into small spots. The head is yellow, a large black spot on front and upper face; antennæ pale on basal part, brown



toward tip; pronotum pale yellowish as also thorax, abdomen rather darker on sides and near tip. Legs pale, unmarked, black bristles; spurs as long as joint I, 5th joint as long as rest together. Wings of general shape of *F. septus*, and similar in venation, seven cross-veins before origin of radial sector in fore wings, one in hind wings; from end of anal vein there is no vein bending up and outward as in *F. bistrigatus*, in this respect like *F. septus*.

Expanse 54 mm.; abdomen long 17 mm.

From Port Darwin, Australia, 13 March (Dodd).

**Formicaleo marginalis** n. sp.

Pale yellowish; a broad black stripe through antennal region from eye to eye; vertex with two black submedian spots, and a median spot behind them; antennae pale brown; pronotum with two dark spots on front margin and a stripe behind each of them to the hind border; thorax striped with dark, a submedian pair in front reaching to middle of mesothorax, a lateral one just above wing, and a short pair on metathorax, and a dark spot over base of wings; pleura with some black spots, mostly on lower parts; abdomen blackish, with short white hair; legs pale, with black bristles, and short black hair. Wings unmarked, except at posterior margin near tip of both pairs where the margin is infusate for about one-third the way from tip to base; venation yellow, subcosta interruptedly black in both wings, and some dark dots on cubitus in fore wings. Venation similar to *F. bistrigatus*, a vein bending upward and outward from end of anal vein in fore wings, seven cross-veins before radial sector in fore wings, one in hind wings. Pronotum rather slender, narrowed in front; legs short, tarsal joint I about as long as II plus III, much shorter than V, spurs a little longer than first joint.

Expanse 43 mm., abdomen long 13 mm.

From Kuranda, Queensland, Australia, March, (Dodd).

**Formicaleo septus** Gerst.

Port Darwin, latter part March through April; also at Kuranda, March.

**Myrmeleon pictifrons** Gerst.

Port Darwin; common, 10 to 21 April; and also 3 September; Mid-Queensland (Perkins).

**Myrmeleon uniseriatus** Gerst.

Port Darwin, 9 September; Mid-Queensland.

**Myrmeleon croceicollis** Gerst.

Kuranda, March.

**Acanthaclisis fundatus** Walk.

Kuranda, March (Dodd); Mid-Queensland, (Perkins).

**Acanthaclisis subtendeus** Walk.

From Kuranda, March (Dodd).